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(54) **DISC PROTECTION CASING AND DRIVE
FOR RECEIVING THE SAME**

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31, 2003, now Pat. No. 7,007,293, which is a continu-
ation of application No. 10/337,999, filed on Jan. 8,
2003, now Pat. No. 6,757,240, which is a continuation
of application No. 09/347,388, filed on Jul. 6, 1999,
now Pat. No. 6,529,471.

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H04N 9/47 (2006.01)

(52) **U.S. Cl.** 369/291; 348/143

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See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,951,264 A	4/1976	Heidecker et al.
4,109,919 A	8/1978	Elliott et al.
4,159,827 A	7/1979	Torrington
4,617,655 A	10/1986	Aldenhoven
4,707,821 A	11/1987	Verhagen
4,749,081 A	6/1988	Carlson et al.
4,755,982 A	7/1988	Douwes
4,771,883 A	9/1988	Herr et al.

(Continued)

FOREIGN PATENT DOCUMENTS

JP 63-304483 12/1988

(Continued)

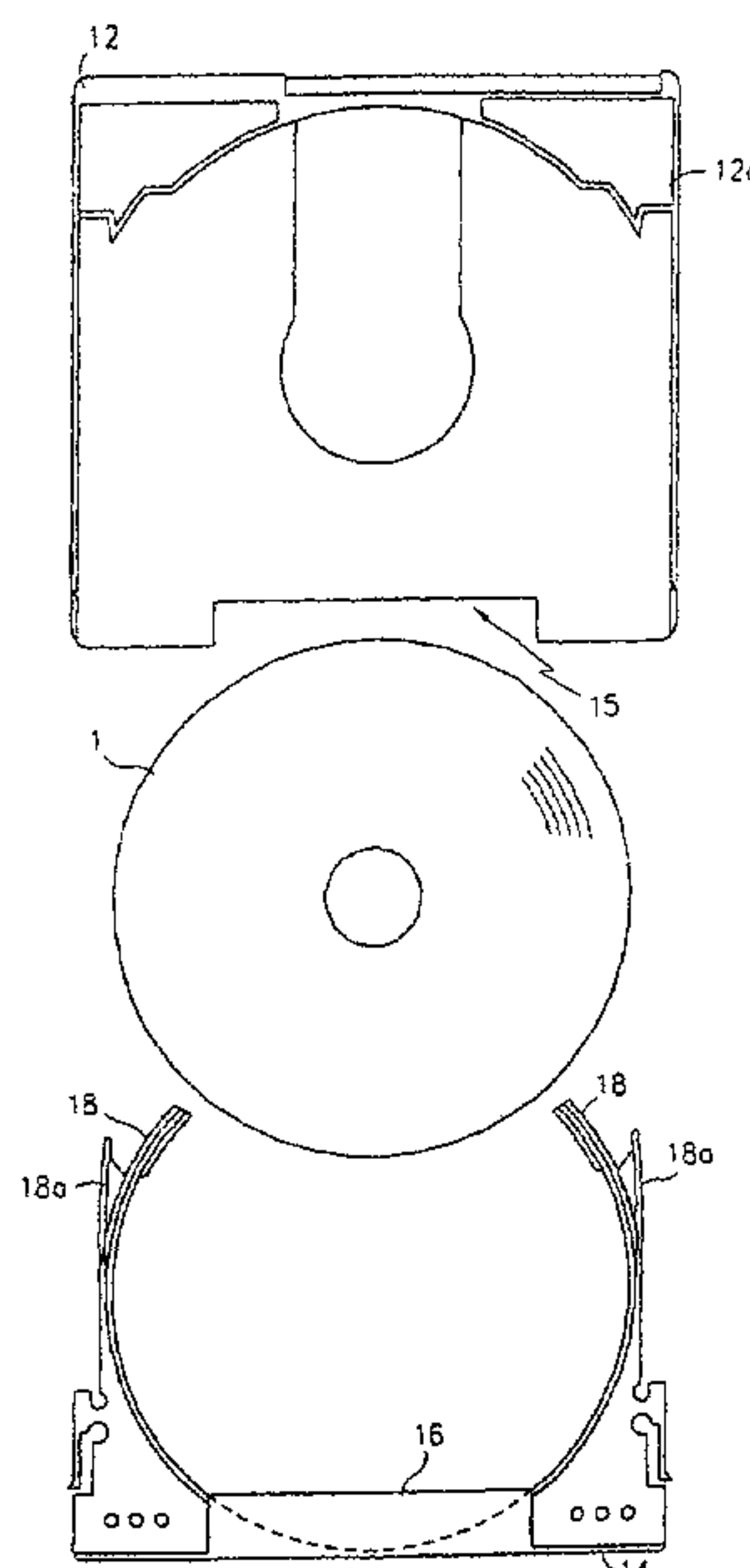
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Birch, LLP

(57) **ABSTRACT**

The disc protection casing includes a disc protection casing
body having a disc receiving space therein. A disc holder,
insertable into the interior of the disc protection casing body,
has an elastic member formed at one end of the same for
supporting a disc. When the disc holder is inserted into the
casing body, a shoulder on the elastic member contacts a
guide member in the casing body and the elastic member
releases a disc supported thereby.

13 Claims, 8 Drawing Sheets



U.S. PATENT DOCUMENTS					
4,773,061	A	9/1988	Stark et al.	6,172,962	B1 1/2001 Goto et al.
4,803,678	A	2/1989	Tanaka et al.	6,205,114	B1 3/2001 Takekoh et al.
4,849,958	A	7/1989	Douwes et al.	6,205,115	B1 3/2001 Ikebe et al.
4,881,640	A	11/1989	Herr et al.	6,215,761	B1 4/2001 Goto et al.
4,928,271	A	5/1990	Verhagen	6,522,623	B1 2/2003 Fujita
4,980,883	A	12/1990	Mutou et al.	6,529,471	B1 3/2003 Lim et al.
5,062,100	A	10/1991	Verhoeven et al.	6,757,240	B2 6/2004 Lim et al.
5,537,389	A	7/1996	Kuwa et al.	2002/0181381	A1 12/2002 Choi et al.
5,548,571	A	8/1996	Mistretta	FOREIGN PATENT DOCUMENTS	
5,581,540	A	12/1996	Dang	JP	2-134781 5/1990
5,668,787	A	9/1997	Shigematsu et al.	JP	03194761 A 8/1991
5,859,829	A	1/1999	Otsuka et al.	JP	06333365 A 12/1994
5,867,476	A	2/1999	Yoshida et al.	JP	07192367 A 7/1995
5,995,482	A	11/1999	Iwazawa	JP	7-320359 12/1995
6,108,298	A	8/2000	Miyazaki et al.	JP	10144031 A 5/1998

FIG. 1
BACKGROUND ART

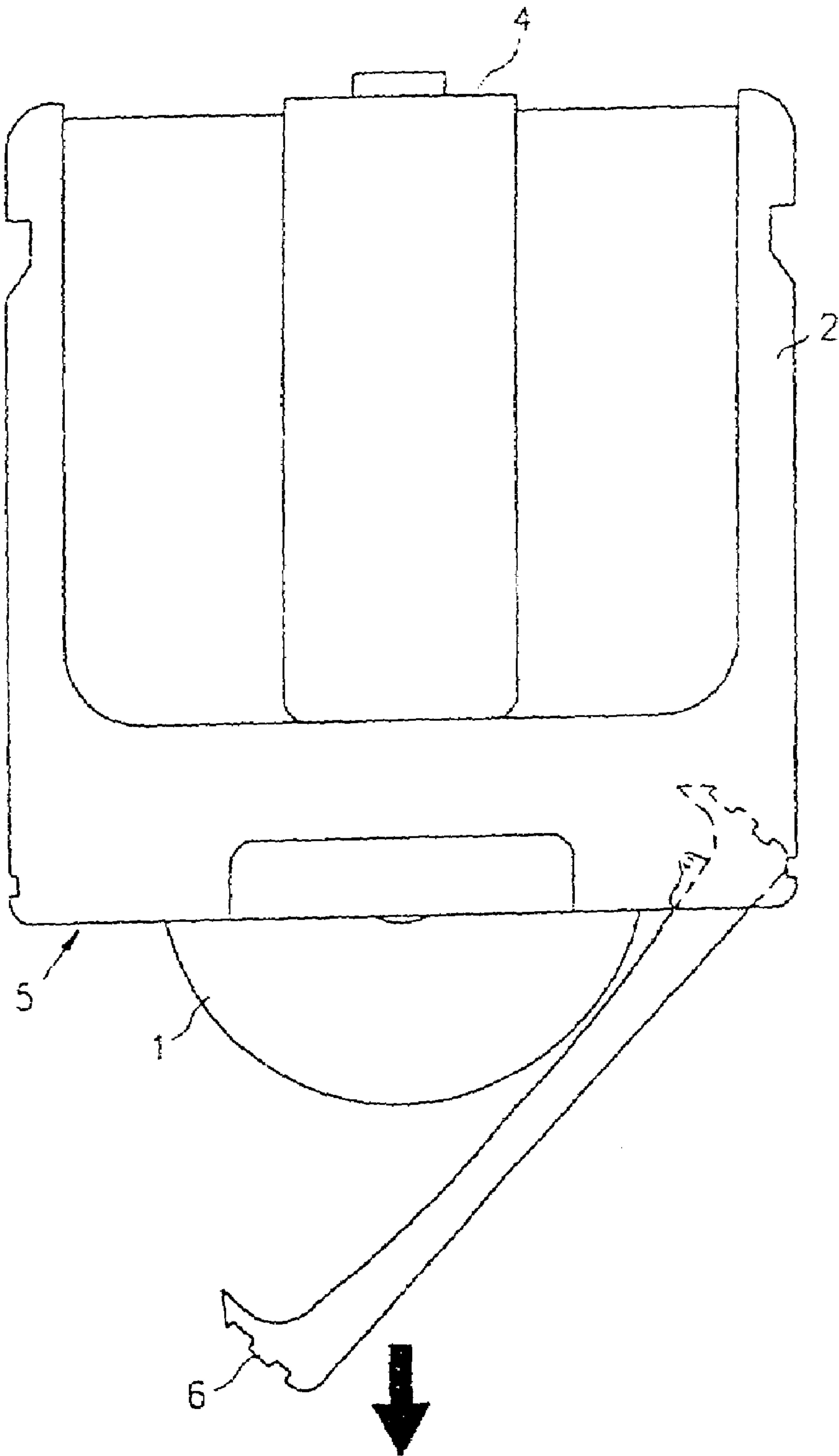


FIG. 2

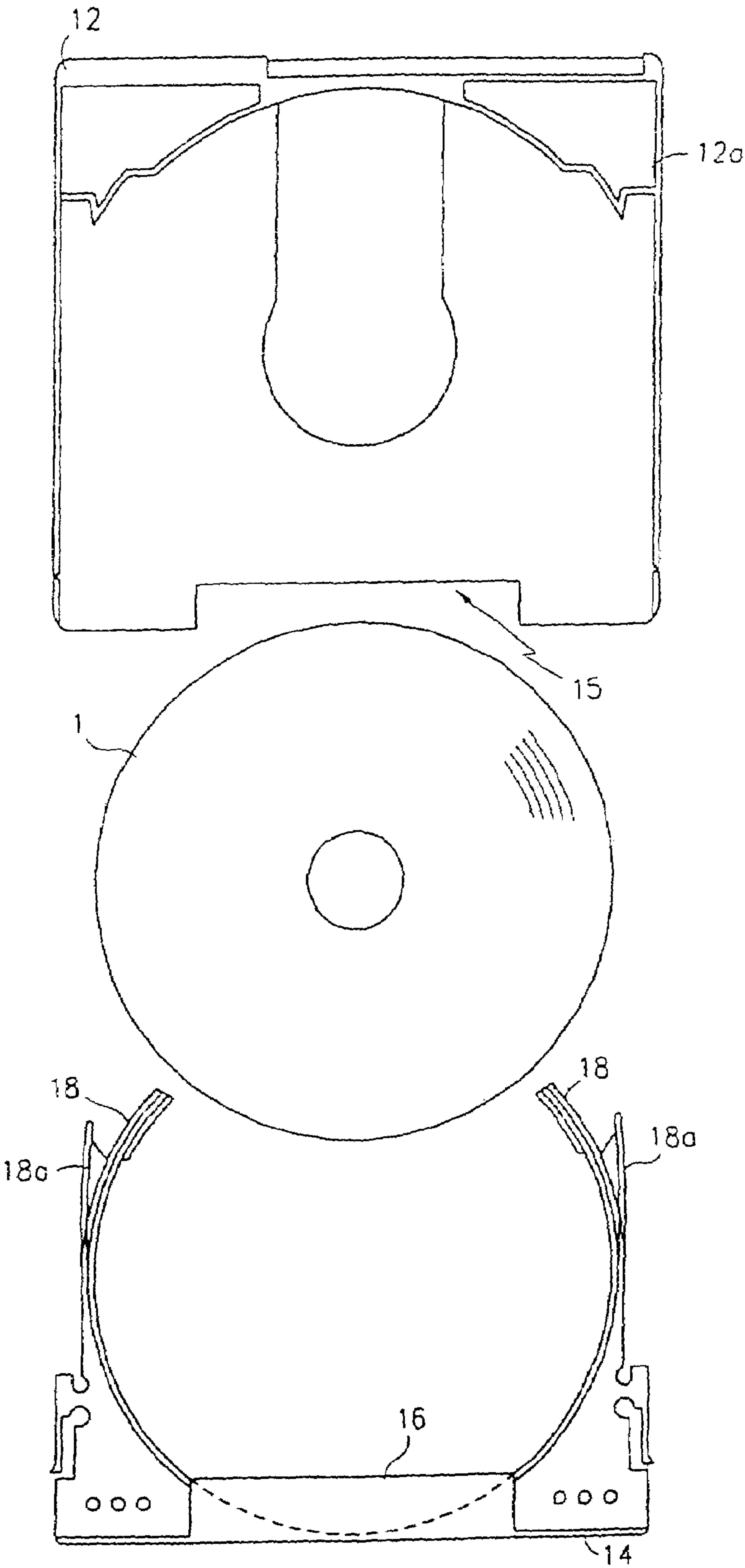


FIG. 3

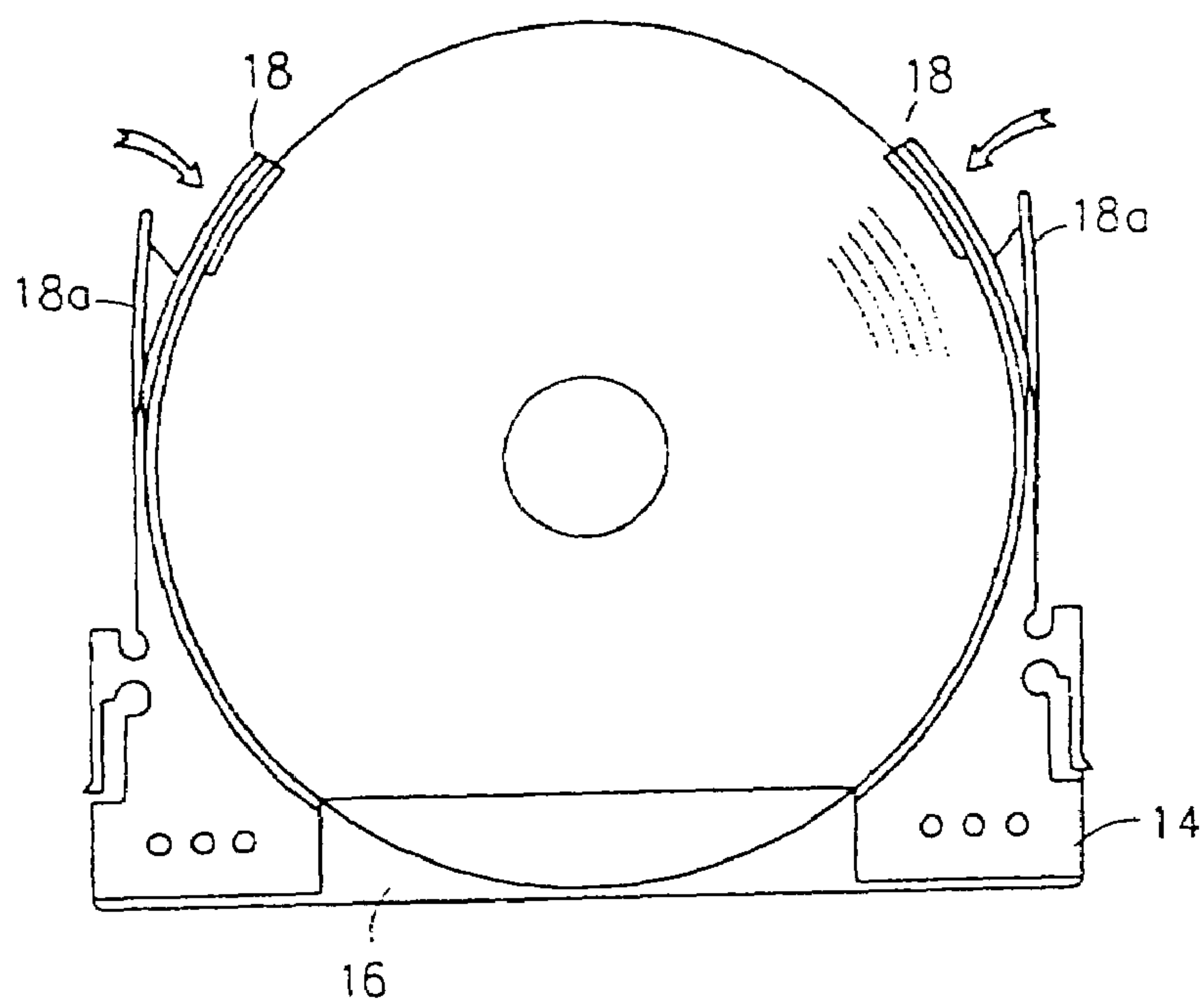


FIG. 4

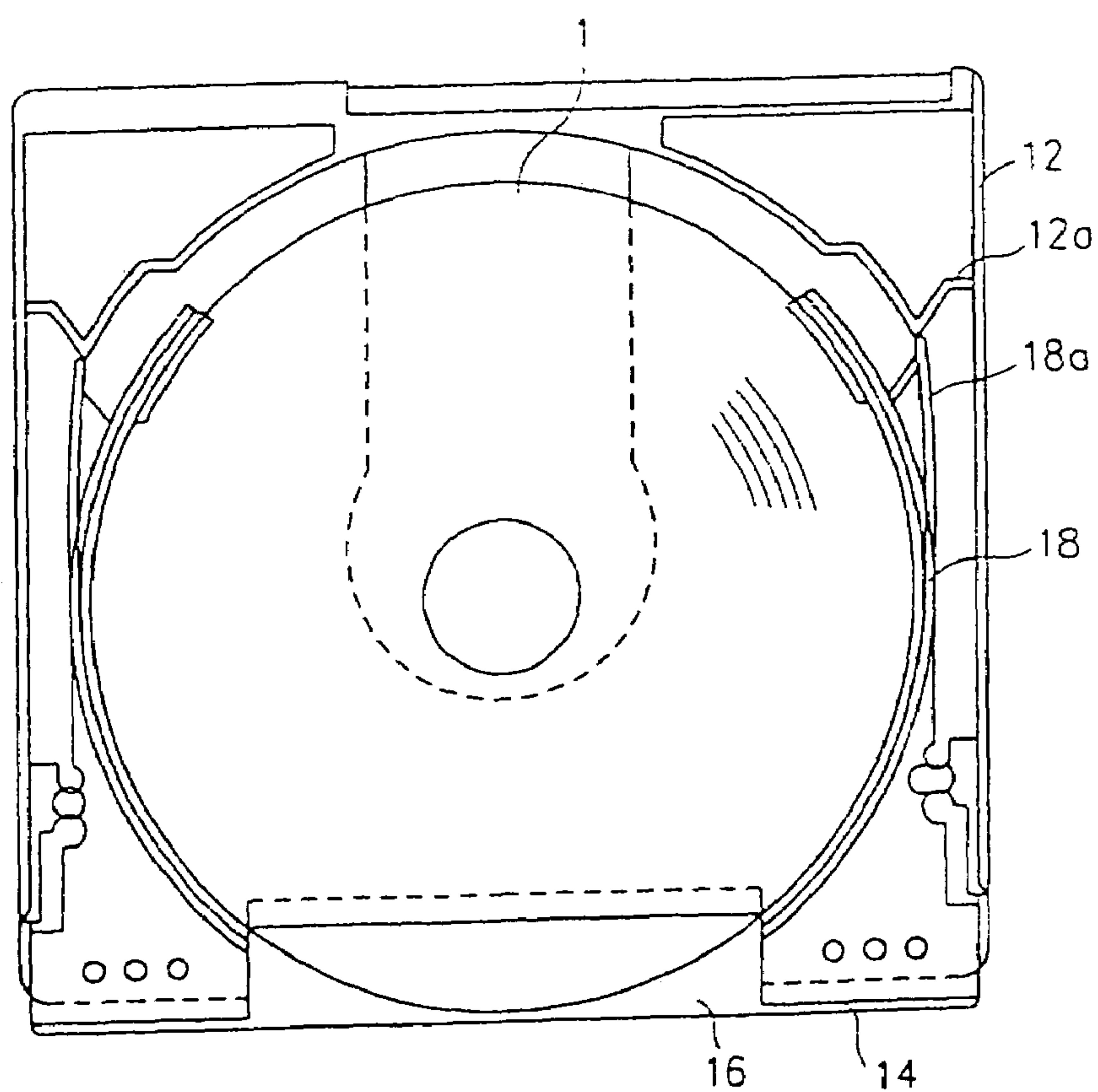


FIG. 5

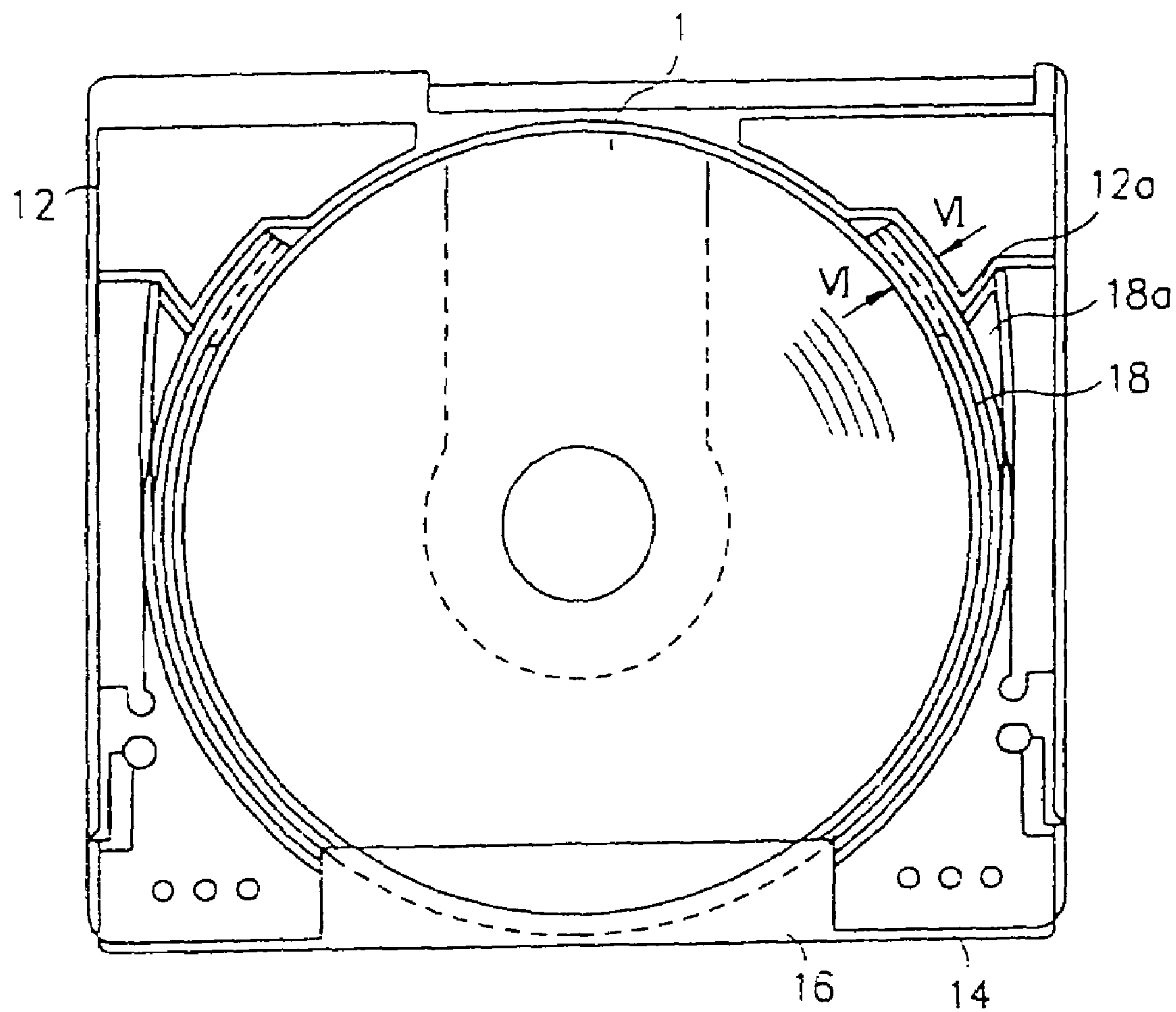


FIG. 6

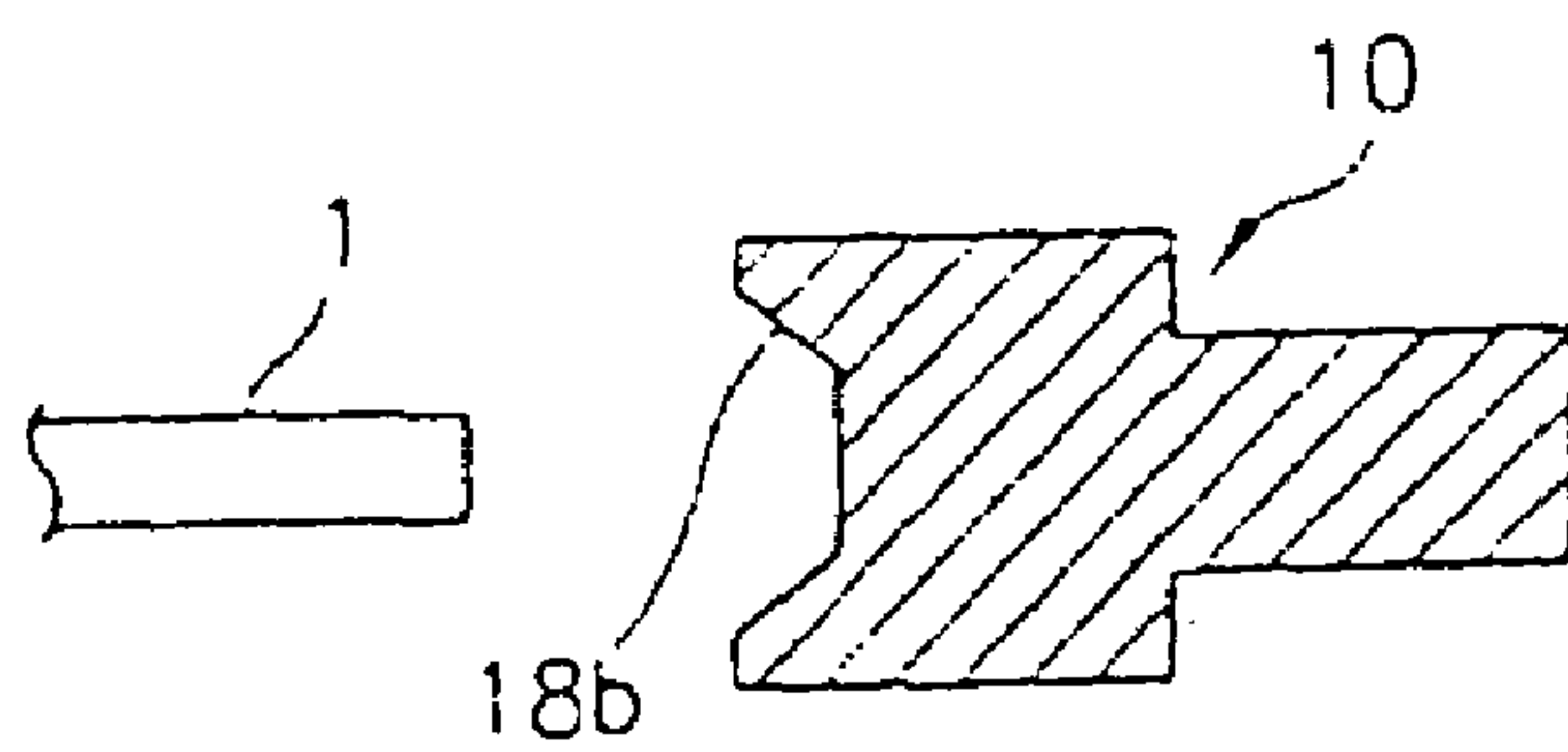


FIG. 7

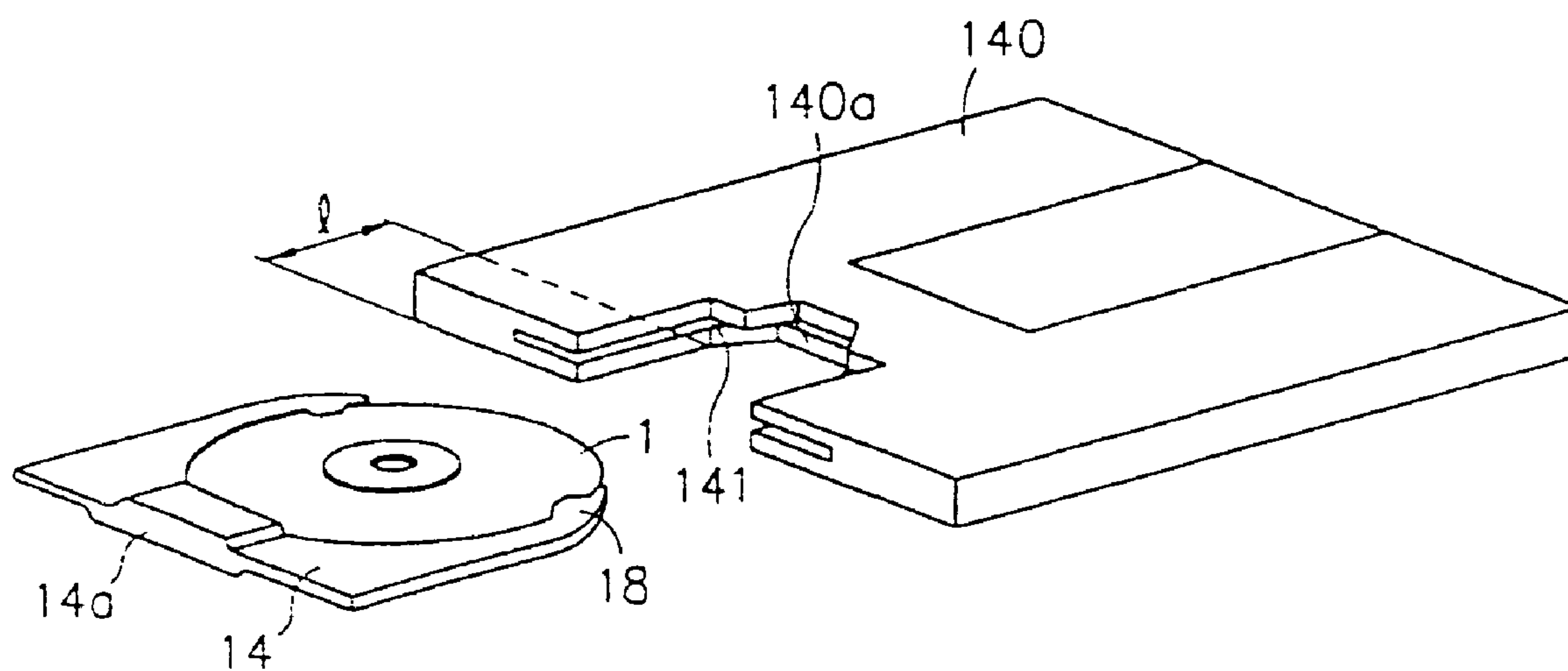


FIG.8

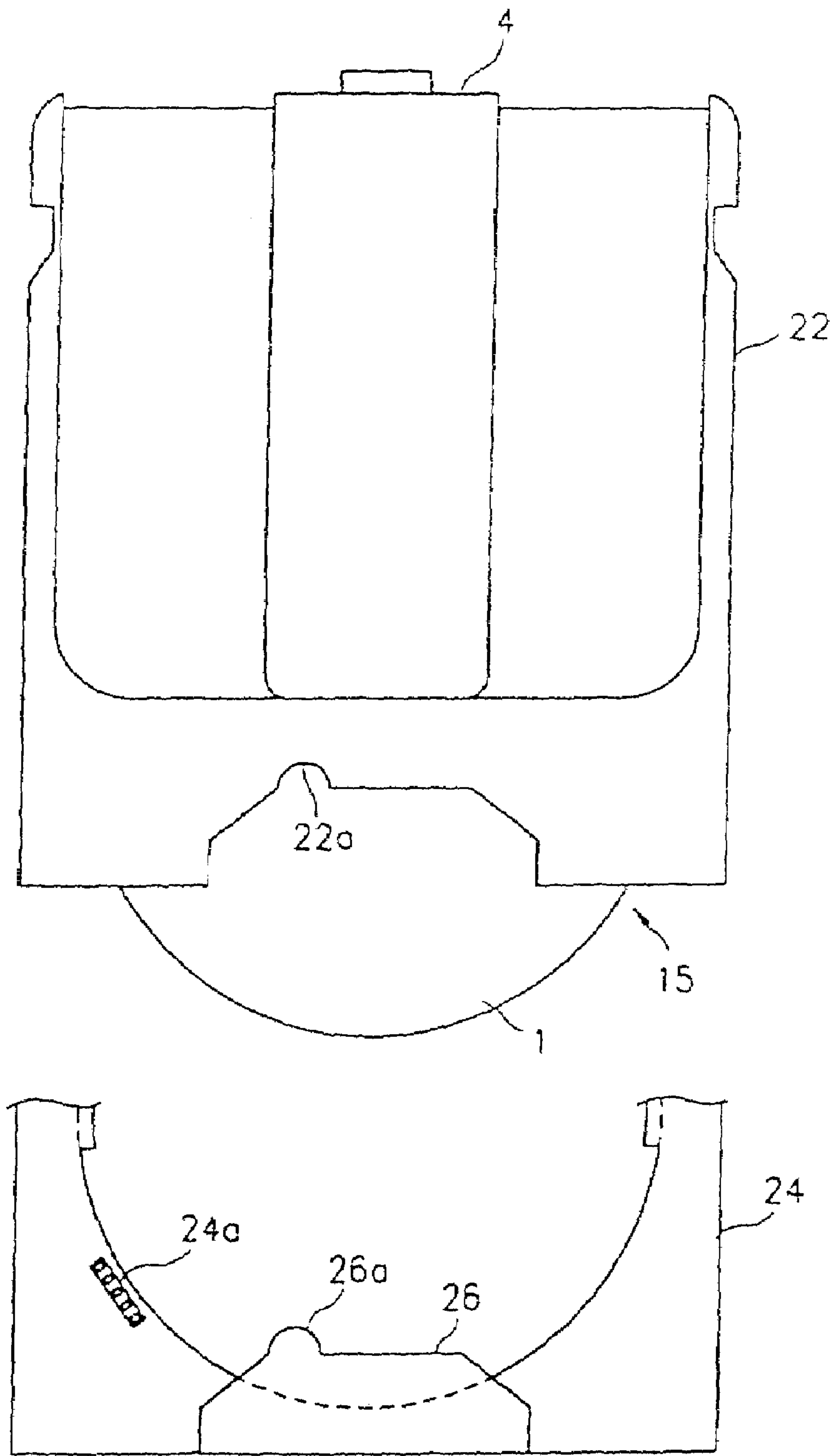


FIG. 9

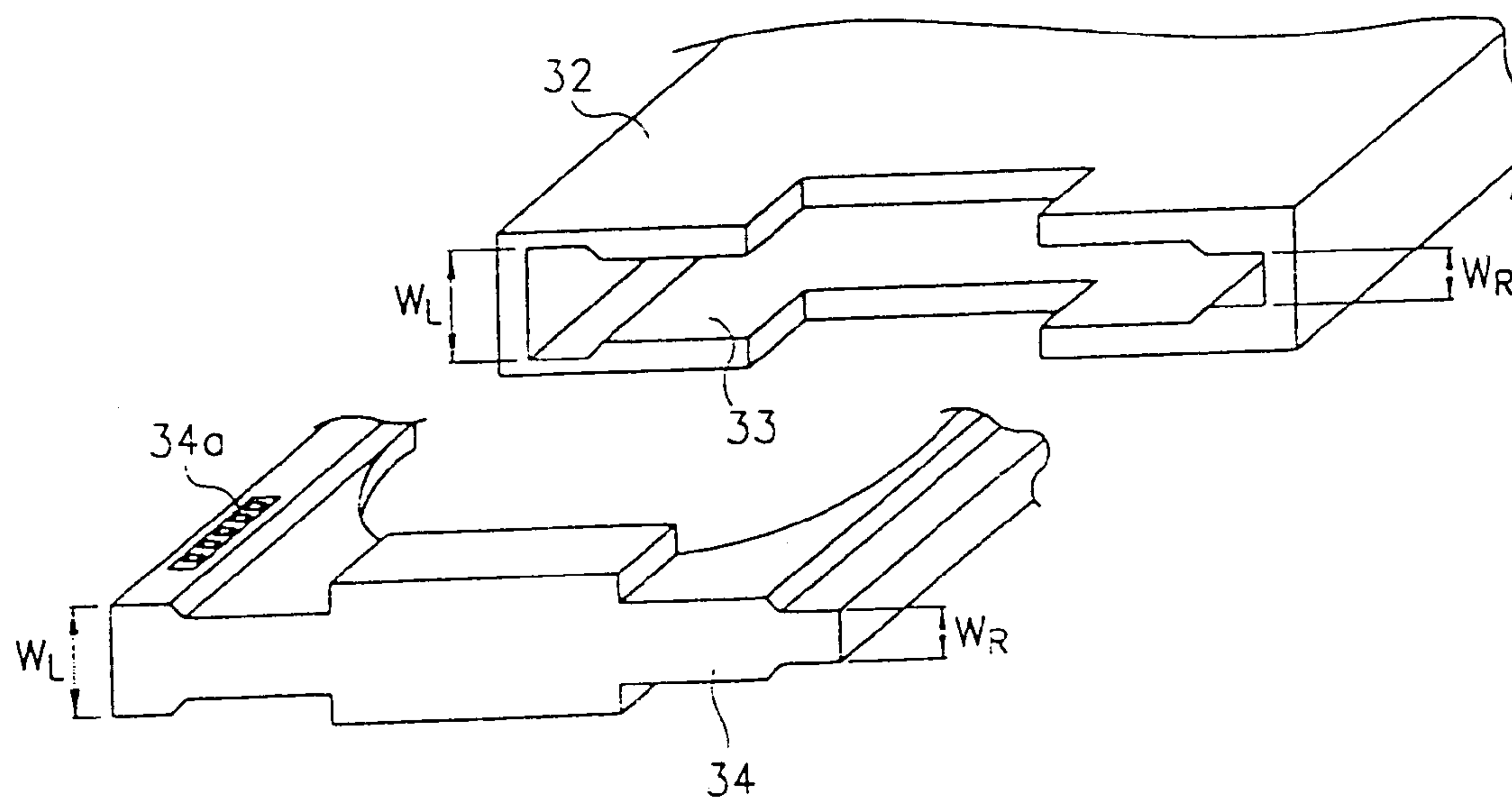


FIG. 10

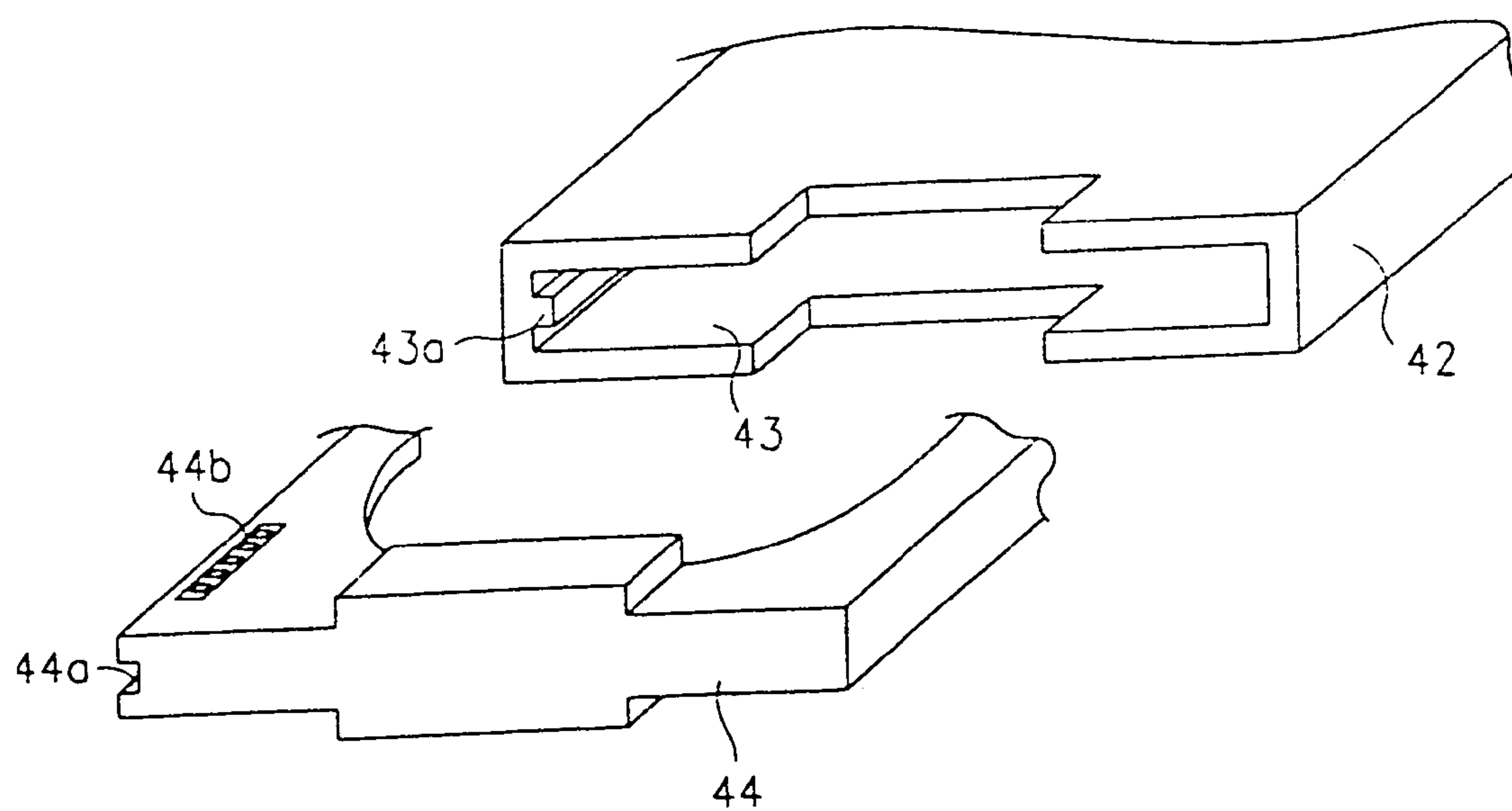
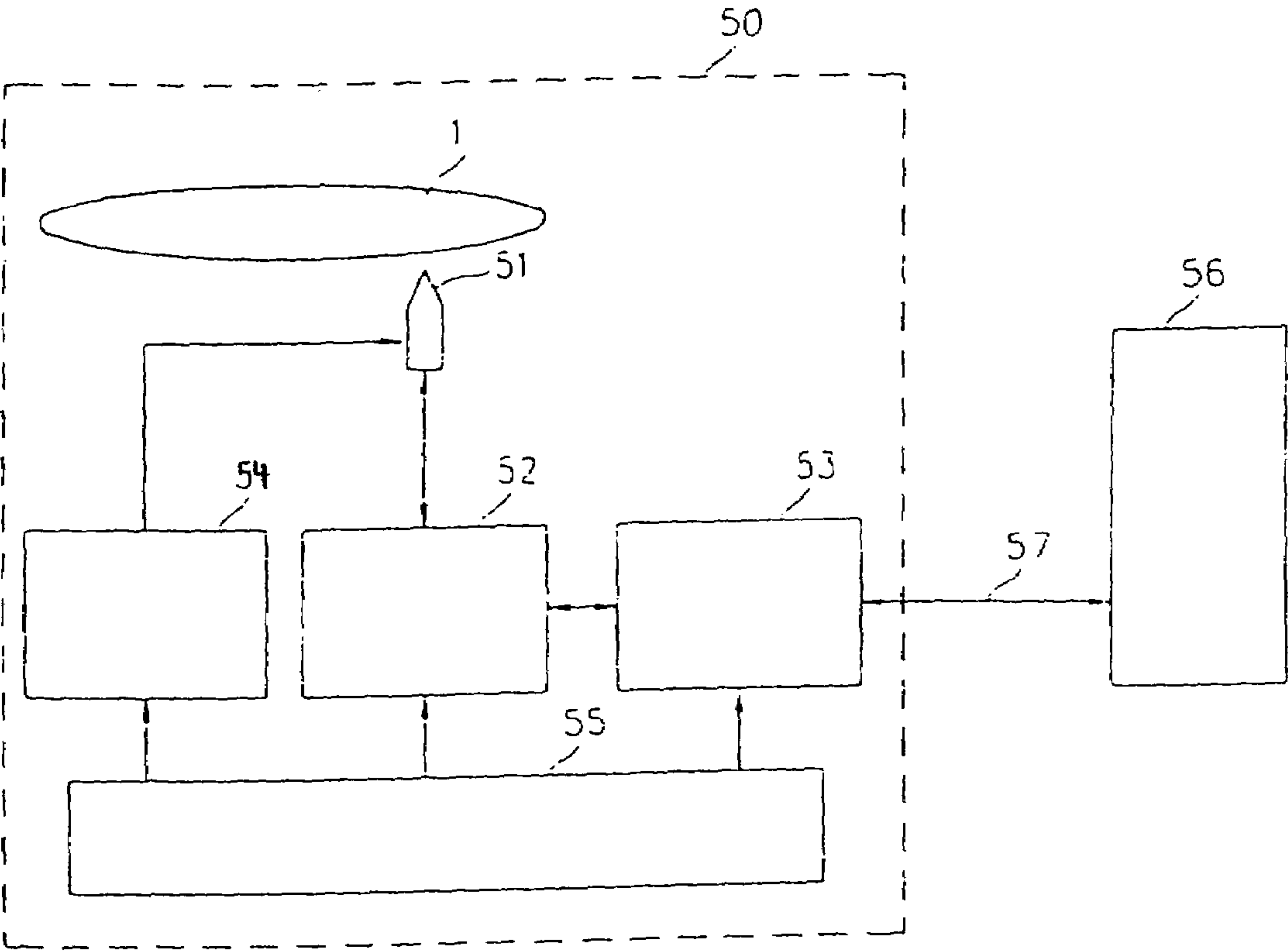


FIG. 11



DISC PROTECTION CASING AND DRIVE FOR RECEIVING THE SAME

This application is a Divisional of application Ser. No. 10/697,291, filed on Oct. 31, 2003, now U.S. Pat. No. 7,007, 293 which is a Continuation of application Ser. No. 10/337, 999, filed on Jan. 8, 2003, which is now U.S. Pat. No. 6,757, 240, which is a Continuation of application Ser. No. 09/347, 388, filed on Jul. 6, 1999, which is now U.S. Pat. No. 6,529, 471, the entire contents of which are hereby incorporated by reference.

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a disc protection casing and a drive for receiving the same.

2. Description of the Background Art

Types of a disc are classified into a reproducing-only type such as a CD-ROM, a DVD-ROM, etc., and a recordable type such as a WORM (Write Once Read Many) type, a rewritable type, etc. in accordance with the number of the data writing operations.

The writable-type disc is generally placed in a disc protection casing such as a cartridge, to protect the disc from external contamination or damage.

It is required that the disc casing is designed to be opened when changing the disc.

Namely, when using a small size cartridge in a large size driving apparatus, since the small size cartridge does not have a certain size opening for the large size driving apparatus, the small size cartridge having a disc therein may not be used for the large size driving apparatus. Recently, a new cartridge capable of changing the disc inserted in the casing has been introduced in order to overcome the above-described problems.

As shown in FIG. 1, the cartridge includes a cartridge body 2 for receiving a disc 1 therein, and a disc holder 6 which may be detachably inserted via one edge of the cartridge body 2.

An opening (not shown) is formed in the bottom of the cartridge body 2, so that a pick-up unit of a drive can access the disc 1, and the opening is closed and opened by a shutter 4.

A receiving portion 5 is formed in the one edge of the cartridge body 2, so that the disc 1 may be inserted into the interior of the cartridge body 2.

In the thusly constituted conventional disc cartridge, when a user wishes to insert a bare state disc (the disc is separated from the cartridge body 2) into the cartridge body 2, the user holds a certain portion of a non-recorded surface of the disc 1 to prevent the data recorded surface from being contaminated and inserts the disc 1 into the receiving portion 5 of the cartridge body 2 and the inserts the disc holder 6 into the receiving port 5.

On the contrary, in a state that a disc 1 is already inserted in the interior of the cartridge body 2, in order to use a bare state disc 1, for removing the disc 1 from the cartridge body 2, the disc holder 6 is detached from the cartridge body 2, and the disc 1 falls down by gravity due to the weight of the disc through the receiving port 5 when the cartridge is held upright by the user.

However, in the conventional disc cartridge, in order to insert the disc into the interior of the cartridge body or remove the disc from the cartridge body, the user holds the disc and inserts the disc into the cartridge body or holds the disc falling from the cartridge body by the weight of the disc. In this case,

the data recorded surface of the disc may be contaminated by pollutants or the like. Therefore, the disc must be very carefully handled.

As a very high capacity and high speed disc is introduced, if the disc is contaminated by pollutants and the like, it is impossible to reproduce the data recorded on the CD or a data reproducing error may occur.

In addition, discs are further classified into a disc having one recordable surface (hereinafter called a single sided disc) and a disc having two recordable surfaces (hereinafter called a double sided disc).

The single sided disc includes a recordable, surface for recording and reproducing data and a label surface for attaching a label thereon, and the double sided disc includes only two recordable surfaces.

In the case of the single sided disc, the data recording surface is opposite to the optical pick-up unit, and in the case of the double sided disc, one or both recordable surfaces of the double side disc may be opposite to the optical pick-up unit for thereby recording and reproducing the data. In the above-described structure, the disc holder 6 is inserted into the cartridge body 2 in a certain direction.

In the case of the single sided disc, the disc must be inserted in one direction, and in the case of the double sided disc, the surface to be recorded or reproduced must be inserted in a certain orientation.

However, when a user re-inserts a bare state single sided disc into the disc cartridge, since the conventional disc holder and the cartridge body are symmetrical, the user may erroneously insert the disc holder into the cartridge body, so that the insertion direction of the disc may be changed.

In particular, in the case of the single sided disc, even when the cartridge body and the disc holder are normally inserted, if the label surface of the disc is opposite to the optical pick-up unit can not access the disc.

Namely, when the disc is properly inserted into the cartridge body, and the disc holder is properly inserted thereinto, the disc is normally recorded and reproduced. Therefore, the user must carefully insert the disc into the disc cartridge, so that in the conventional art, there is much inconvenience to use the disc.

SUMMARY OF THE INVENTION

Accordingly, it is an object of the present invention to provide a disc protection casing and a drive for receiving the same which are capable of preventing a data recording surface of a disc from being contaminated when inserting and removing a disc.

It is another object of the present invention to provide a disc protection casing and a drive for receiving the same which are capable of easily separating a disc from the disc protection casing.

To achieve the above objects, there is provided a disc protection casing according to the present invention which includes a disc protection casing body having a disc receiving space therein, and a disc holder insertable into the interior of the disc protection casing body and having an elastic member formed at one end of the same for supporting the disc.

To achieve the above objects, there is also provided a disc holder according to the present invention which includes an elastic member engaged with a certain portion thereof for elastically supporting a disc, and a shoulder formed at one side of the elastic member for rotatably positioning and separating the disc in/from a receiving space of a drive.

In a disc protection casing and a drive for receiving the same according to the present invention, a disc protection

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casing for a single sided disc and a disc holder are inserted in a certain direction, and a double sided disc is inserted into a disc protection casing in a certain direction, so that it is possible to prevent an erroneous insertion of the disc.

To achieve the above objects, there is further provided a drive according to the present invention which includes a receiving portion including a disc protection casing having a disc receiving space therein, and disc holder receiving receivable in the disc protection casing body and having one end engaged with an elastic member for supporting a disc, and a recording and reproducing unit for recording and reproducing data on/from a disc received in the interior of the disc protection casing.

Additional advantages, objects and features of the invention will become more apparent from the description which follows.

BREIF DESCRIPTION OF THE DRAWINGS

The present invention will become more fully understood from the detailed description given hereinabove and the accompanying drawings which are given by way of illustration only, and thus are not limitative of the present invention, and wherein:

FIG. 1 is a view illustrating a conventional detachable disc cartridge;

FIG. 2 is an exploded plan view illustrating the structure of the a cartridge body and a disc holder according to a first embodiment of the present invention;

FIG. 3 is a plan view illustrating a state that a disc is inserted in a disc holder as shown in FIG. 2;

FIG. 4 is a plan view illustrating a state before a disc holder of FIG. 2 is inserted into a cartridge body;

FIG. 5 is a plan view illustrating a state after a disc holder of FIG. 2 is inserted into a cartridge body;

FIG. 6 is a cross-sectional view taken along line VI-VI of FIG. 5;

FIG. 7 is a perspective view illustrating an insertion relationship between an adapter and a disc holder according to a first embodiment of the present invention;

FIG. 8 is a plan view illustrating the structures of a disc cartridge according to a second embodiment of the present invention and a holder insertable into the disc cartridge;

FIG. 9 is a partial perspective view illustrating a disc cartridge according to a third embodiment of the present invention and a holder insertable in the disc cartridge;

FIG. 10 is a partial perspective view illustrating a disc cartridge according to a fourth embodiment of the present invention and a holder insertable in the disc cartridge; and

FIG. 11 is a schematic block diagram illustrating an optical disc recording and reproducing unit according to the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The disc protection casing and a drive for receiving the same according to the present invention will be explained with reference to the accompanying drawings.

As shown in FIG. 2, a disc cartridge according to the present invention includes a cartridge body 12 having a disc receiving space formed therein and slanted surfaces 12a which operate as guide members formed at an outer portion of the receiving space, and a disc holder 14 having semi-circular tension arms 18 which operate as elastic members for elastically supporting the disc 1.

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A receiving port 15 is formed in an outer edge of the cartridge body 12, and a disc 1 inserted therethrough into the disc holder 14 is received into the interior of the cartridge body 12 via the receiving port 15.

The slanted surfaces 12a are integrally formed with the cartridge body 12 in a rib shape when injection-molding the cartridge body 12. These slanted surfaces 12a contact with the tension arms 18 when the disc holder 14 holding the disc 1 is received into the cartridge body 12, so that the tension arms 18 are pushed toward the respective lateral walls of the cartridge body 12 for thereby releasing a restricting force of the tension arms 18 with respect to the disc 1.

In addition, when the disc holder 14 is separated from the cartridge body 12, the tension arms 18 provide a certain elastic force to the disc 1 in a radial direction of the disc 1, so that the disc 1 is not separated from the disc holder 14.

In order to release the restriction force on the disc 1 and support the disc 1, shoulders 18a which are engaged to the slanted surfaces 12a are integrally formed at respective outer portions of the tension arms 18 being integral with the disc holder 14 when injection-molding the disc holder 14, and holder portion 16 is formed at an outer edge portion of the disc holder 14 for holding the disc holder 14.

As shown in FIG. 3, the tension arms 18 elastically support the disc 1 using a certain radial force applied toward the center portion of the disc 1, so that the disc 1 is stably supported by the holding portion 16 and the tension arms 18.

The process by which the disc 1 is inserted into the cartridge body 12 will now be explained in detail.

As shown in FIG. 2, a disc 1 is first inserted by a user into the disc holder 14 through an opening formed between the outer end portions of the tension arms 18 in the direction of arrow. As the disc 1 is inserted, the tension arms 18 are spread outwardly and upon completion of the inserting operation, the tension arms 18 elastically hold the disc 1 against the holding portion 16.

At this state as shown in FIG. 3, the user holds the holding portion 16 of the disc holder 14 and inserts the disc holder 14 into the cartridge body 12 via the receiving port 15.

Upon inserting the disc holder 14 into the cartridge body 12, the shoulders 18a formed at the tension arms 18 contact with the slanted surfaces 12a of the cartridge body 12 before the disc holder 14 is inserted fully.

Namely, the shoulders 18a are moved toward the respective walls of the cartridge body 12 along the slanted surfaces 12a from the state of FIG. 4 to the state of FIG. 5, so that an elastic supporting force of the tension arms 18 with respect to the disc 1 is released.

The disc 1 is rotatably positioned in the cartridge body 12, so that a spindle motor (not shown) can rotate the disc 1, and the optical pick-up unit (not shown) can access the recording surface of the disc 1.

The converse operation by which the disc holder 14 is separated from the cartridge body 12 in order to remove the disc 1 from the cartridge body 12 will next be explained.

When separating the disc holder 14 from the cartridge 12, the restriction force exerted by the slanted surfaces 12a to the shoulders 18a is released, so that the tension arms 18 support the disc 1 by an elastic recovering force of the tension arms 18.

At this time, since a concave slanted surface 18b is formed in an end portion of each tension arm 18, even when the disc 1 is moved up and down in the cartridge body 12, the disc 1 is stably guided to the center portion of the tension arms 18a, so that the tension arms 18 stably support the disc 1.

In the present invention, since the tension arms 18 which elastically support the disc 1 need have only a certain thick-

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ness compared to the height of the edge of the disc 1, the thickness of the disc holder 14 can be made small.

As shown in FIG. 7, in order to record and reproduce a small size recording medium (for example, when the diameter of the disc is 80 mm) using a disc driving apparatus which is capable of recording or reproducing a large size recording medium (for example, when the diameter of the disc is 120 mm), a slanted surface (not shown) which has the above-described function may be formed in the interior of an adapter 140 having an outer size which is the same as the cartridge body of the large size recording medium for the reason that a certain compatibility with respect to other apparatuses is obtained because almost all driving apparatuses are recently designed to drive a large size recording medium.

In this case, the user can detachably mount the disc holder 14 with the disc 1 therein at the receiving port 141 of the adapter 140.

In the drawings, reference numeral "T" designated a length difference between the large size recording medium and the small size recording medium. The end portion 14a of the disc holder 14 is moved up to the center end portion 140a of the adapter 140 when inserting the disc holder 14 in the adapter 140 for thereby obtaining a certain size opening.

The disc cartridge according to a second embodiment of the present invention includes a certain structure so that the cartridge body and the disc holder can be inserted only in a certain orientation.

As shown in FIG. 8, a groove 22a which is formed eccentrically in a leftward or rightward direction is formed in the cartridge body 22, and a protrusion 26a is formed on the disc holder 24 to be matingly insertable into the groove 22a.

The protrusion 26a is formed on the holding portion 26 and is eccentrically formed leftwardly or rightwardly to be opposite to the groove 22a.

Therefore, since the groove 22a and the protrusion engageable only in a certain opposed orientation, the disc holder 24 is received in the cartridge body 22 only in a certain orientation.

Namely, the disc holder 24 is not received in the cartridge body 22 in a state that the groove 22a does not correspond to the protrusion 26a.

A guide message 24a is written on the upper surface of the disc holder 24 for guiding an insertion direction when the disc 1 is inserted into the cartridge body 22.

As the guide message, there are "Recordable side of disc" or "Label side of disc" in accordance with the data recording surface or label surface of the disc 1, so that a user can recognize the insertion direction of the disc 1.

Therefore, the user can insert the disc holder into the cartridge body 22 in a certain orientation based on an asymmetrical shape of the cartridge body 22 and the disc holder 24, and the insertion direction of the disc 1 is coincided with the insertion direction of the cartridge body 22 and the disc holder 24 based on the guide message 24a.

As shown in FIG. 9, the disc cartridge according to a third embodiment of the present invention includes a cartridge body 32 having an asymmetrically shaped receiving port 33, and a disc holder 34 having an asymmetrically shaped end portion corresponding to the receiving port 33.

In the embodiment of FIG. 9, the width W_L between the receiving port 33 and the left edge portion of the disc holder 34 received in the receiving port 33 is wider than the width W_R of the right edge portion.

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Namely, if the shape of the disc holder 34 received in the cartridge body 32 is not coincided with the shape of the receiving port 33 of the cartridge body 32, the disc holder 34 is not received therein, so that a certain insertion orientation is implemented.

A guide message 34a is formed on the upper surface of the disc holder 34 as shown in FIG. 9 to inform the user of the insertion orientation of the disc 1 in the same manner as in the embodiment of FIG. 8.

FIG. 10 is a perspective view illustrating a disc cartridge according to a fourth embodiment of the present invention.

As shown therein, the disc cartridge according to the fourth embodiment of the present invention includes a cartridge body 42 in which a rail 43a is protruded from a lateral wall of a receiving port 43, and a disc holder 44 having a groove 44a which is opposite to the rail 43a.

In the embodiment of FIG. 10, the rail 43a is formed only at a left lateral wall of the receiving port 43 and has a certain height, and a rail is not formed at the right lateral wall.

Namely, when the disc holder 44 is inserted into the cartridge body 42, if the groove 44a in the disc holder 44 and the rail 43a of the cartridge 42 are not corresponding engaged with each other, the disc holder 44 is not received into the cartridge body 42. Therefore, the disc holder 44 is received only in a certain orientation.

A guide message 44b is formed on the upper surface of the disc holder 44 of the fourth embodiment of the present invention to inform the user of the insertion orientation of the disc 1 in the same manner as in the embodiments of FIGS. 8 and 9.

In the adapter 140 of FIG. 7 which is used for recording and reproducing a double sided or single sided recording medium using a disc driving apparatus capable of recording or reproducing a large sized recording medium, the receiving port 141 of the adapter 140 and the disc holder 14 received in the receiving port 141 are asymmetrically formed, so that the disc holder 14 is received into the adapter 140 only in a certain orientation.

In this case, a guide message may be printed on a certain portion of the adapter 140 to inform the user of the insertion orientation of a small sized recording medium.

As shown in FIG. 11, the disc recording and reproducing unit 50 which drives the disc 1 includes an optical pick-up unit 51 recording and reproducing data on/from the disc 1, an optical pick-up unit transport unit 54 transporting the optical pick-up unit 51, a data processing unit 52 processing the data inputted and transferring the processed data to the optical pick-up unit 51, an interface unit 53, and a controller 55 controlling the operations of the above-described elements. The interface unit 53 of the optical disc recording apparatus is connected with a host 56, such as a microprocessor, so that certain instructions and data 57 are communicated therebetween.

As described above, the disc protection casing and a drive for receiving the same according to the present invention are capable of preventing a data recording surface of a disc from being contaminated when inserting and removing the disc.

In the present invention, since the disc is inserted in the disc holder, a user is able to easily insert a disc into a cartridge and remove the disc from the cartridge.

In the single sides disc cartridge according to the present invention, since the cartridge body and the disc holder are asymmetrically formed, a certain insertion orientation is implemented for thereby preventing an erroneous operation of the apparatus.

In the present invention, since there is provided a guide message for informing a user of the insertion orientation of

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the disc, it is possible to prevent an erroneous insertion of the disc holder into the cartridge body.

Although the preferred embodiments of the present invention have been disclosed for illustrative purposes, those skilled in the art will appreciate that various modifications, additions and substitutions are possible. Without departing from the scope and spirit of the invention as recited in the accompanying claims.

What is claimed is:

1. A device for recording or reproducing data on/from an optical disk, the optical disk inserted in a protection casing, the device comprising:

a receiving unit operative to receive at least the optical disk inserted in the protection casing;
a pickup unit to recording or reading data on/from the optical disc;
a servo unit to control the pickup unit;
data processor to process data output from the pickup unit or to transfer data to be recorded to the pickup unit; and
a controller coupled to at least servo unit and data processor to control recording or reading operation of data on/from the optical disk,

wherein the protection casing comprises,

a casing body having a receiving space therein and an access port formed at a first side of the casing body; and

a disk holder insertable into the casing body via the access port, one of the disk holder and the first side of the casing body being structured such that the disk holder is prevented from being incorrectly inserted into the casing body, wherein the entire disk holder is contained within the casing body,

wherein the casing body includes a first indentation disposed at a top center of the access port, and the disc holder includes a first projection disposed at a top center thereof for fitting into the first indentation, and

wherein the first indentation includes a groove off-centered in the first indentation, and the disk holder further includes a second projection off-centered from the first projection.

2. A device for recording or reproducing data on/from a recording medium, the recording medium inserted in a protection casing, the device comprising:

a receiving unit operative to receive at least the recording medium inserted in the protection casing;
a recording/reading unit to recording or reading data on/from the recording medium;
a servo unit to control the recording/reading unit;
data processor to process data output from the recording/reading unit or to transfer data to be recorded to the recording/reading unit; and

a controller coupled to at least servo unit and data processor to control recording or reading operation of data on/from the recording medium,

wherein the protection casing comprises,

a casing body having a receiving space therein and an access port formed in a first side of the casing body; and

a recording medium holder insertable into an interior of the casing body via the access port, and wherein the recording medium holder comprises an end portion, the end portion having a surface facing away from the access port, a first end of the surface having a first height, and a second end of the surface having a second height different from the first height, wherein the first and second ends permit the recording medium holder to be inserted into the casing body in only one way.

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3. A device of claim 2, further comprising:

an interface unit connected to a microprocessor to communicate with therebetween.

4. A device of claim 3, wherein the microprocessor transfers a recording/reading command and/or data to be recorded through the interface unit.

5. A device of claim 4, wherein the controller receives the recording/reading command and/or data to be recorded from the microprocessor through the interface unit.

6. A device for recording or reproducing data on/from a recording medium, the recording medium inserted in a protection casing, the device comprising:

a receiving unit operative to receive at least the recording medium inserted in the protection casing;

a recording/reading unit to recording or reading data on/from the recording medium;

a servo unit to control the recording/reading unit;

data processor to process data output from the recording/reading unit or to transfer data to be recorded to the recording/reading unit; and

a controller coupled to at least servo unit and data processor to control recording or reading operation of data on/from the recording medium,

wherein the protection casing comprises,

a casing body having a receiving space therein and an access port; and

a recording medium holder insertable the casing body via the access port;

wherein the recording medium holder comprises an end portion, the end portion having a surface facing away from the access port, a first portion of the surface having a first height, and a second portion of the surface having a second height different from the first height, wherein the first and second portions permit the recording medium holder to be inserted into the casing body in only one way.

7. A device of claim 6, further comprising:

an interface unit connected to a microprocessor to communicate with therebetween.

8. A device of claim 7, wherein the microprocessor transfers a recording/reading command and/or data to be recorded through the interface unit.

9. A device of claim 8, wherein the controller receives the recording/reading command and/or data to be recorded from the microprocessor through the interface unit.

10. A device for recording or reproducing data on/from an optical disk, the optical disk inserted in a protection casing, the device comprising:

a receiving unit operatively to receive the protection casing where at least the optical disk inserted, wherein the protection casing includes

a casing body having a receiving space therein and an access port formed in a first side of the casing body; and

a disc holder insertable into an interior of the casing body via the access port, and one of the disc holder and the first side of the casing body being structured such that the disc holder is prevented from being incorrectly inserted into the casing body, the disc holder including an elastic member for supporting the disc therein;

a pickup unit to record or read data on/from the optical disc;

a servo unit to control the pickup unit;

a data processor to process data output from the pickup unit or to transfer data to be recorded to the pickup unit; and

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a controller operatively coupled to at least the servo unit and the data processor to control recording or reading operation of data on/from the optical disk.

11. The device of claim **10**, further comprising:

an interface unit operatively connected to the controller and a host device to facilitate communications therebetween.

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12. The device of claim **11**, wherein the host device is configured to transfer a recording/reading command and/or data to be recorded through the interface unit.

13. The device of claim **12**, wherein the controller is configured to receive the recording/reading command and/or data to be recorded from the host device.

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